

## 2.0 DESCRIPTION OF PROPOSED ACTION AND ALTERNATIVES

This section discusses the Proposed Action and the No Action Alternative. Section 2.1 describes the Proposed Action for the EA that would allow NNSA to meet its purpose and need for agency action. The No Action Alternative is presented in Section 2.2 as a baseline for comparison with the consequences of implementing the Proposed Action. Alternatives that were considered but dismissed from further analysis in this EA are discussed in Section 2.3, and related actions are discussed in Section 2.4.

### 2.1 Proposed Action

This proposed project would route unauthorized vehicular traffic around the core area of LANL which includes the main administrative and technical area at TA-3. Authorized vehicle traffic would be allowed access to the LANL core area. Access-control stations would be constructed at appropriate access points to screen vehicles on a 24 hour basis, seven days a week. This project would entail construction of an eastern and western bypass road around a major portion of Technical Area (TA) 3 of LANL. The Proposed Action would also include closing streets providing access into TA-3, safety improvements to intersections within TA-3, and construction of two new short access streets. Access along Pajarito Road between White Rock and TA-3 would be controlled and vehicles would be screened. The road would not be closed unless security conditions warranted such a response. Figures 2, 3, and 4 show the conceptual alignments of these bypass roads, locations of access-control stations, and other components of the Proposed Action. Installation and operation of the various components of the Proposed Action would be performed in stages.

The Western Bypass Road would have intersections at West Jemez Road, Mercury Road, and Pajarito Road while the Eastern Bypass Road would include the redesign of the Jemez Road and Diamond Drive intersection and provide a new intersection with East Jemez Road. There would also be new intersections constructed at Eniwetok Road, on Sigma Mesa, and at Pajarito Road near TA 59. The proposed Eastern Bypass Road would cross Mortandad and Sandia Canyons. Several existing utilities would be relocated or rerouted at the intersections and at various points along the proposed corridors. Some existing structures, particularly the high bay part of Building 3-40 would likely have to be demolished, while some trailers and transportables would either be relocated within LANL, salvaged and removed from LANL, or demolished to accommodate the likely roadway. Table 1 details the likely disposition of these structures.

Staffed and unstaffed access-control stations would be constructed at locations required to effectively isolate vehicle traffic from the LANL core area. The project would also emplace vehicle barriers, relocate existing utilities, provide new occupied structures with required utilities, and install vehicle queuing lanes, inspection areas, and vehicle turning areas. The northern ends of Casa Grande, Bikini Atoll Road, Diamond Drive, and Pajarito Road would be permanently closed off to assure that all vehicle access comes through controlled points.

Appropriate traffic control signals and signs that meet LANL and New Mexico State Highway Department standards would be provided along the proposed bypass road routes and at intersections. The roads would be constructed to accommodate heavy truck traffic and built to meet LANL and New Mexico State Highway standards. Paved pedestrian walkways and bicycle

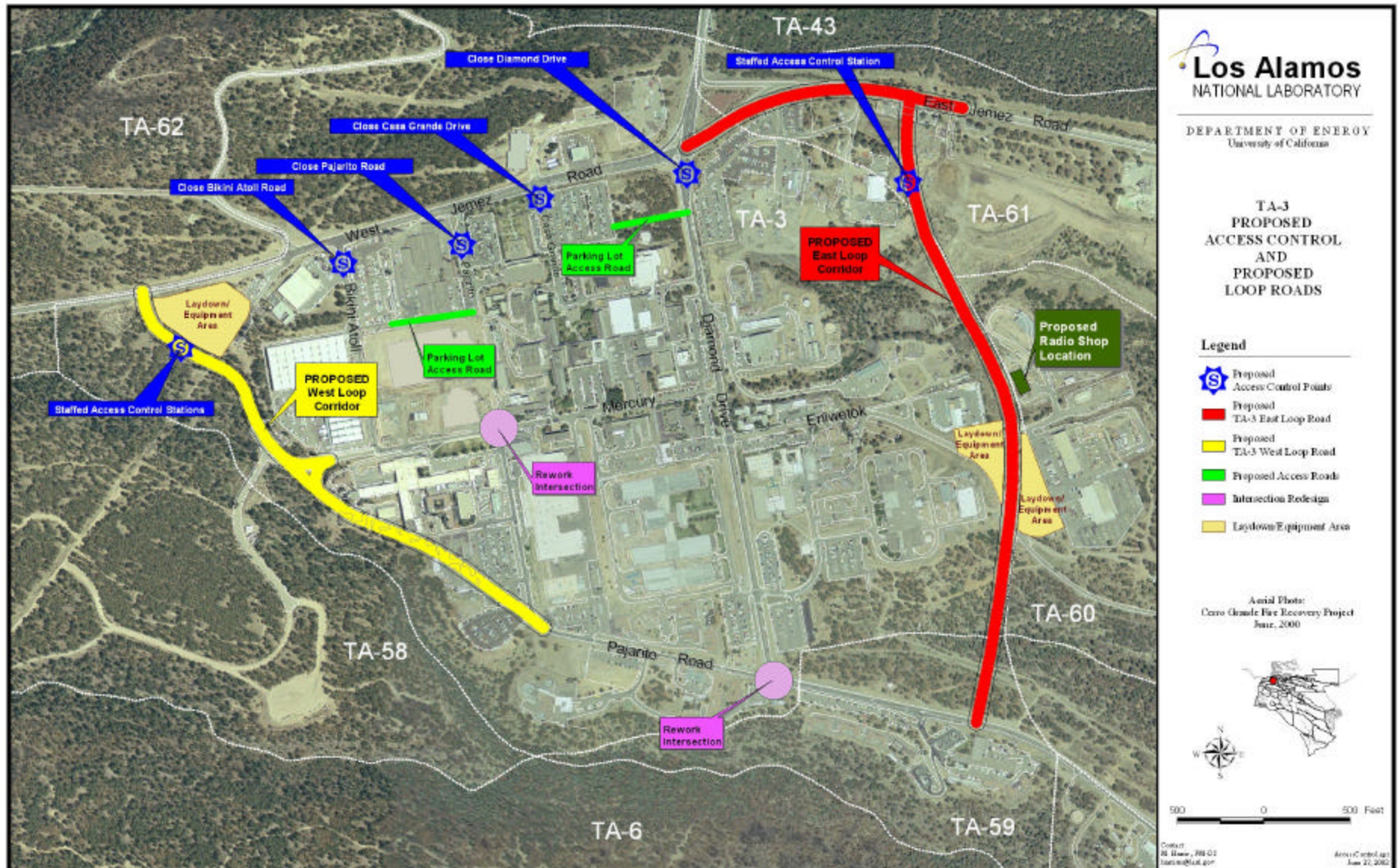


Figure 2. Proposed access controls and bypass roads around TA-3.



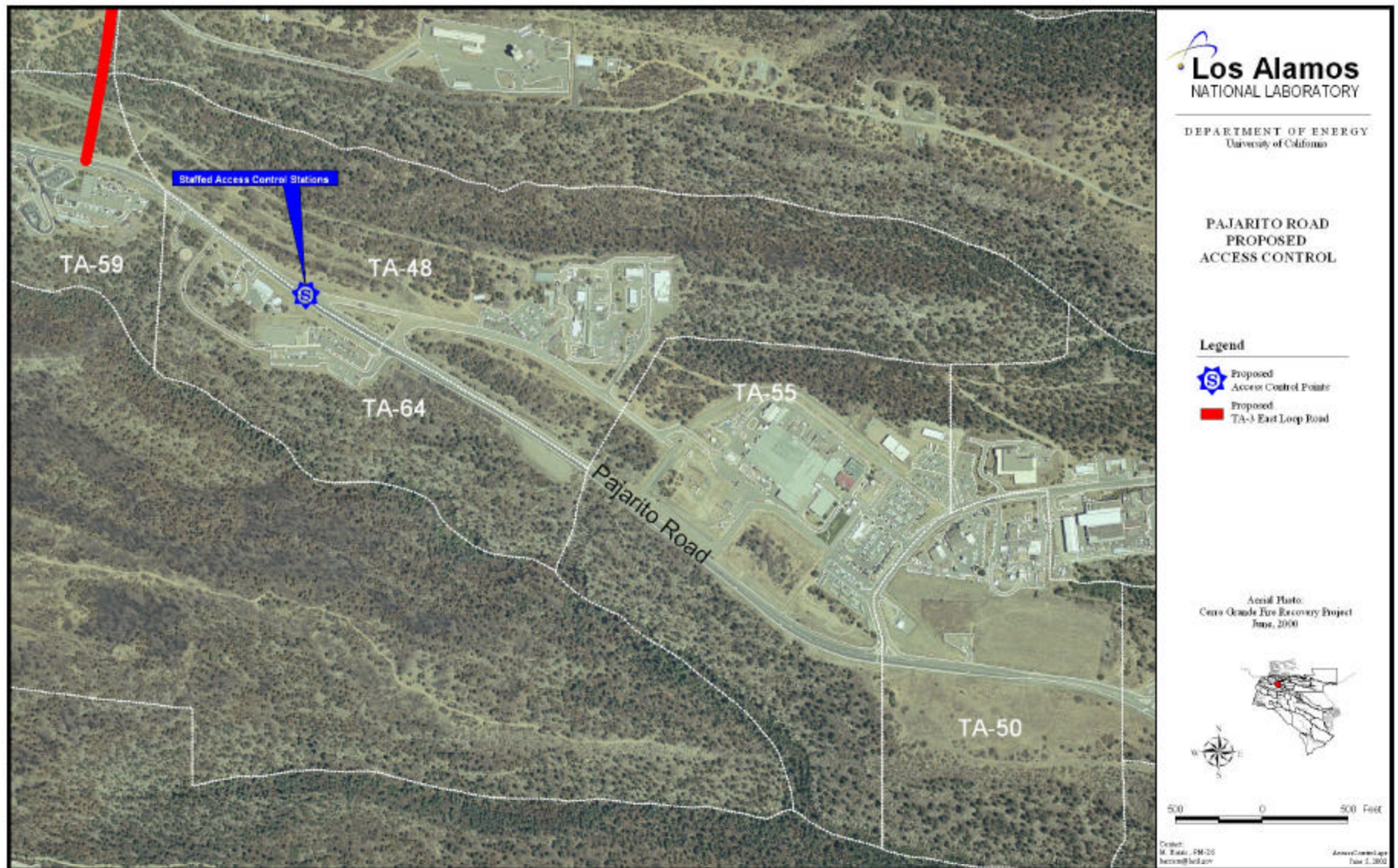


Figure 3. Proposed Pajarito Road access controls.





Figure 4. Proposed access controls at Pajarito Road near State Road (SR) 4.

**Table 1. Bypass Roads Project: Structures Proposed for Removal, Relocation, or Salvaging**

<b>Structure</b>	<b>Potential Disposition</b>
<b>Western Bypass Road</b>	
3-1887 Trailer, NASA Program	Salvage/Demo/Relocate
3-1888 Trailer, Nuclear Information System Group Office	Salvage/Demo/Relocate
3-545 Trailer	Salvage/Demo/Relocate
3-1702 Trailer, Earth, Environment, and Sciences Division, Hydrology, Geochemistry, and Geology group	Salvage/Demo/Relocate
3-1596 Trailer, Nuclear Information System Group	Salvage/Demo/Relocate
3-1530 Trailer, Leased Trailer	Return to owner/Remove from LANL
3-546 Trailer	Salvage/Demo/Relocate
3-1572 Trailer	Salvage/Demo/Relocate
3-473 Trailer	Salvage/Demo/Relocate
3-460 Trailer	Salvage/Demo/Relocate
3-473 Trailer, Geophysics group	Salvage/Demo/Relocate
3-472 Trailer, Geophysics group	Salvage/Demo/Relocate
3-461 Trailer, geo-engineering	Salvage/Demo/Relocate, could possibly stay in place
3-462 Trailer	Salvage/Demo/Relocate, could possibly stay in place
3-1789 Trailer	Salvage/Demo/Relocate
3-2018 Trailer	Salvage/Demo/Relocate
3-2234 Conex Box	Relocate
3-1934 Conex Box	Relocate
3-1936 Conex Box	Relocate
3-1932 Box on trailer	Relocate
3-1951 Conex Box	Relocate
3-1956 Conex Box	Relocate
3-1781 Truck Trailer	Relocate
3-1578 Trailer	Salvage/Demo/Relocate
3-1701 Trailer	Salvage/Demo/Relocate
3-40 High Bay at South End of Building	Demolish/Relocate Rock Shop to existing building
Antenna mounted on trailer	Relocate
<b>Eastern Bypass Road</b>	
61-23 Radio Shop	Demolish, construct new building next to Communications Operations Building
61-19 Storage Shed	Relocate
61-20 Storage Shed	Relocate
61-21 Storage Shed	Relocate
61-22 Storage Shed	Relocate
61-40 Storage Shed	Relocate
61-40 Storage Shed	Relocate
61-41 Storage Shed	Relocate
Los Alamos County Landfill, recycling area west of entrance road	County to relocate recycling function

lanes would be provided along the bypass corridors. This project would replace parking areas removed as a result of road construction, provide new or expanded lots within or near the LANL core area, and build two parking lot access roads to link existing lots with local roads.

Additional parking replacement options would need to be separately considered should private vehicles later be completely excluded from the LANL core area. Additional NEPA review would be required should this action become necessary for security purposes.

Consistent with DOE Order 413.3, *Program and Project Management for the Acquisition of Capital Assets*, the bypass roads and related facilities would be constructed in accordance with sustainable design concepts. For example, construction might incorporate elements made of reclaimed and recycled materials, and energy-efficient lighting fixtures could be used. All activities at LANL are required to minimize waste generation. Every effort would be made to recycle and re-use construction (and demolition) materials. LANL has existing recycling contracts for concrete and asphalt. To the maximum extent possible, construction (and demolition) contractors would be required to segregate these materials for recycling. Waste Minimization Plans would be developed and implemented.

Site preparation and construction activities would produce a type of waste called “construction and demolition” waste, which is a nonhazardous subcategory of “solid” waste as defined in New Mexico State regulations. Solid waste refers to the regulatory definition of waste in Federal regulation (40 CFR 261.3) and not to its physical state; solid wastes may be solid, liquid, or gaseous. Soil and reclaimed asphalt material and crushed concrete rubble are also classified as construction and demolition waste. These wastes would be staged on Sigma Mesa at the TA-60 storage yards for building debris until they could be reused at LANL or at other onsite or offsite locations. Non-reclaimable and non-recyclable construction and demolition waste would be disposed of in the Los Alamos County Landfill or its replacement facility.

Clearing or excavation activities during site construction would have the potential to generate dust and to encounter previously buried materials. If buried material or cultural remains were encountered during construction, activities would cease until their significance was determined and appropriate subsequent actions taken. Standard dust suppression methods (such as water spraying) would be used onsite to minimize the generation of dust during construction activities.

Work at the site would require the use of heavy construction equipment. The work would also require the use of a variety of hand tools and equipment. Noise at the site would be audible primarily to the involved workers and to workers housed in the adjacent LANL core area. Involved site workers would be required to wear appropriate personal protective equipment (PPE), including hearing protection. During the construction phase, space within disturbed areas or paved parking lots in the immediate vicinity would be available for equipment storage and material staging (see Figure 2).

Construction and demolition work would be planned and managed to ensure that standard worker safety goals are met. Work would be performed in accordance with good management practices, regulations promulgated by the Occupational Safety and Health Administration, and various DOE Orders involving worker and site safety practices. Activities would also be planned and performed according to applicable standard industry practices, DOE Orders, and LANL’s Laboratory Implementing Requirements (LIRs).



Construction, maintenance, and environmental activities conducted within LANL water courses require permits certified by the New Mexico Environment Department (NMED) under Sections 401 and 404 of the Clean Water Act (33 U.S.C. 1251). Executive Orders 11988 (Floodplain Management) and 11990 (Protection of Wetlands) also apply to projects at LANL. Engineering best management practices (BMPs) would be implemented for each construction site as part of a site Storm Water Pollution Prevention Plan executed under a National Pollutant Discharge Elimination System (NPDES) construction permit. These BMPs may include the use of straw bales, plywood, or synthetic sedimentation fences with appropriate supports installed to contain excavated soil and surface water discharge during construction.

### 2.1.1 Construction

Construction would be planned to begin in early 2003 and be completed by the end of 2005. Some parts of the proposed project would be phased to address security priorities, traffic safety considerations, and access for emergency response vehicles during construction. Traffic control plans would be implemented to minimize delays and congestion during the construction. Table 2 details the approximate project sequencing.

Approximately 100 construction workers would be onsite during the peak construction period, adding approximately 45 vehicles to local roadways. These workers would park their personal vehicles either in existing parking lots or in other designated parking areas in existing disturbed areas. Equipment would include about ten large dump trucks, four dozers, six excavators, four backhoes, ten pickups, and related equipment such as compactors, a sideboom, trencher, and welders during the construction and demolition activities.

**Table 2. Generalized Construction Sequence**

Pajarito Road Access-Control Stations (east and west)
Eastern Bypass Road and Access Control
Jemez/Diamond and Eastern Bypass Intersections
Eastern Bypass Road/Pajarito Intersection
Western Bypass Road and Access Control
Western Bypass/West Jemez Intersection
Western Bypass/Pajarito Intersection
Parking Lot Access Roads
Pajarito/Mercury Intersection
Diamond/Pajarito Intersection
Close Diamond, Casa Grande, Pajarito, Bikini Atoll Roads

Note: These activities would occur partially in sequence and partially in parallel.

The vehicles would operate primarily during the daylight hours and both vehicles and some of the equipment would be locked and left onsite over night. Temporary construction lighting for any nighttime activity would be used; it would be directed toward the work area and away from canyon areas. Construction materials would be procured primarily from New Mexico suppliers. Construction workers would be drawn primarily from communities across New Mexico.

The bypass road routes would initially be surveyed and then cleared of trees and plants. Road corridors would vary from 50 to 200 ft (15 to 60 m) in width. Approximately 7.2 acres (ac) (2.9 hectares [ha]) of vegetation would be removed to build the Western and Eastern Bypass Roads. Utilities would be moved and all structures in the established corridor would be moved or demolished. Storm water pollution prevention measures would be set in place. Heavy equipment would be used to grade the road to “rough grade,” filling in low spots and lowering high areas in the topography, with the exception of canyon crossings with Area of Environmental Interest (AEIs) that would be spanned with bridges. The construction contractor would balance the cuts (soil removal) with the fill (soil placement) so that there was an approximate mass balance of soils on the project site. Soils would be moved around as required on the project site to accomplish this. If a mass balance of the soils could not be achieved, soils would either be imported or exported from the site. Where additional soils were required, soils would be imported from local sources to fill in the road bed areas. Where additional soils are removed, these would be stockpiled in existing soil storage areas at LANL for future use. Any side slopes or retaining walls required would be constructed. Drainage ditches and all under-road culverts would also be set in place, and utilities would be installed. Bridges would begin to be constructed around the time that rough grading is accomplished, and then curbs and gutters would be installed. After rough grading, fine grading of the road would occur establishing the final elevations of the roadbed by placing and compacting approved fill material. The base course layer would be placed and compacted on the road. Asphalt or concrete would then be placed on top of the base course by heavy equipment. Guardrails, striping, signs, and traffic signals would be installed and intersections finished. These activities for road construction would not occur sequentially. Many activities would be concurrent. However, work would start at one end of the road and progress toward the other end. A typical roadway section is illustrated in Figure 5.

The Western Bypass Road would be constructed as a two-lane road. The proximity to existing structures and steep canyons (see Photo 1) makes construction of wider roads in this area difficult and very expensive. In particular, the area between Building 3-40 and the canyon just to the west is extremely narrow. Several existing trailers and other equipment near Building 3-40 would be demolished or relocated. A portion of Building 3-40 known as the High Bay, located on the south side of the building, would require demolition and associated repairs to the remaining portions of this structure. The Western Bypass Road would intersect two separate, two-lane roads in three locations. There are no wetlands or floodplains within the Western Bypass Road corridor, although portions of the corridor are partially within an AEI for the Mexican spotted owl.

The Eastern Bypass Road would be constructed as a four-lane road. The Radio Shop, Building 61-23, on East Jemez Road would be demolished so that East Jemez Road could be re-routed to intersect with the new Eastern Bypass Road. A new Radio Shop would be constructed near the Communication Operations Building (see Figure 2). The new Radio Shop would be constructed as a permanent building of about 10,000 ft<sup>2</sup> (900 m<sup>2</sup>) in size. Utilities are present in the area and would be brought to the building site via short underground trenches.

The Eastern Bypass Road would intersect two two-lane roads in two locations. The Eastern Bypass Road would occupy a corner of the existing Los Alamos County Landfill boundary within an area that is used for storing recycled materials (such as rubber, metal, and organic



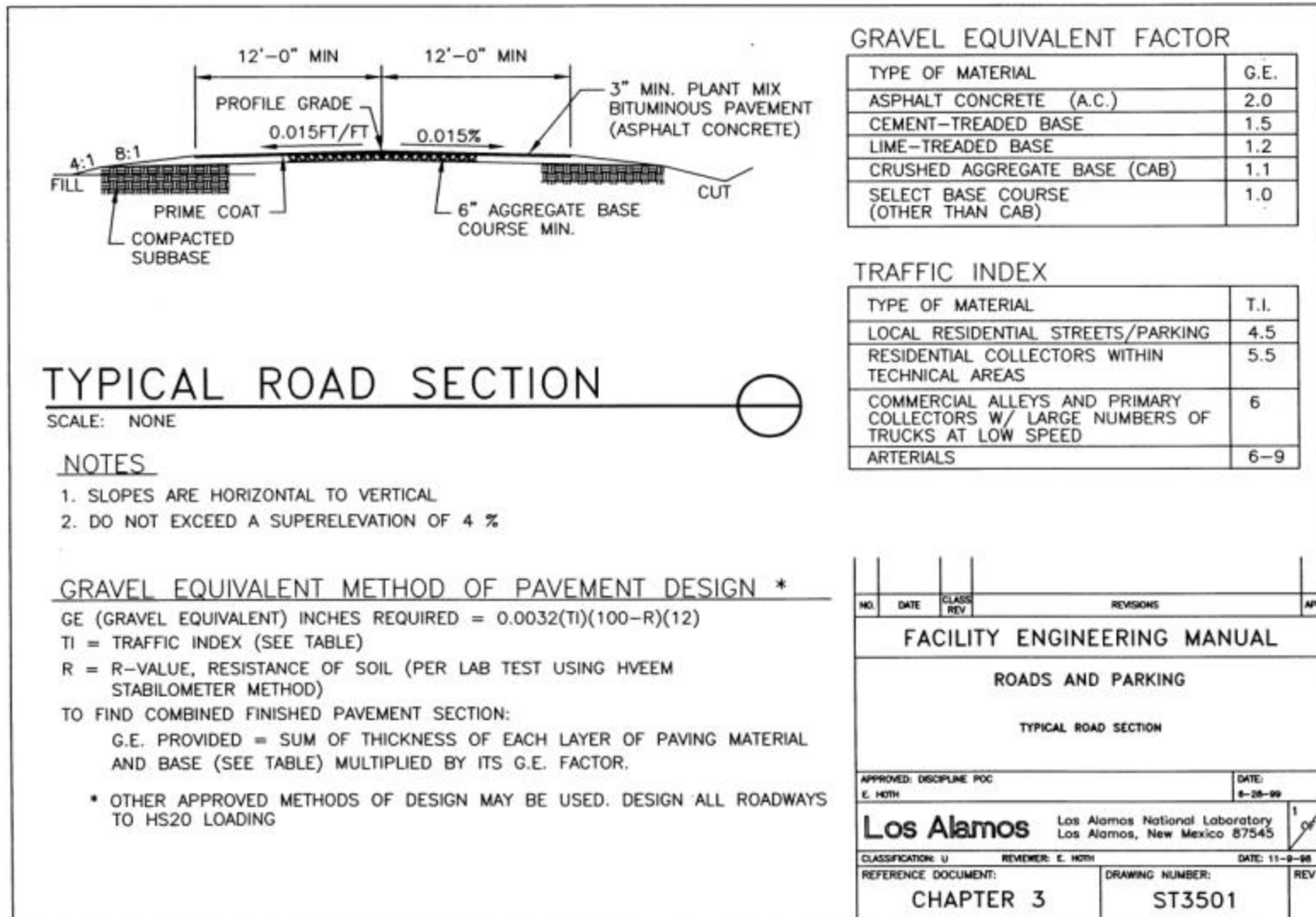


Figure 5. Typical road section.



**Photo 1. Structures and canyons at southwestern portion of proposed Western Bypass Road.**

material that could be used as mulch) and related activities. Permitting issues associated with this area would be coordinated among UC, NNSA, Los Alamos County, and New Mexico Environment Department (NMED). The proposed alignment of the Eastern Bypass Road would make use of the existing concrete and asphalt rubble fill area of the landfill site.

Approximately the top ten feet (ft) of the fill at the rubble fill area of the landfill site would be consolidated by grinding and pulverizing the material to provide a suitable roadbed. Reconstruction and strengthening of the rubble fill would likely result in the need to lengthen the drainage culvert running underneath, and changes to the slopes of the fill to a 2 to 1 or 3 to 1 slope would be required. Additional culvert sections would be added to the upgradient western side of the culvert using heavy machinery to augment the existing culvert sections. The Sandia Canyon wetlands area is located downgradient and east of this culvert.

The proposed Eastern Bypass Road alignment traverses a part of Sandia Canyon and upper Mortandad Canyon, and structural bridges are proposed to be constructed to span these two canyon locations. The use of structural bridges spanning the canyons would minimize the removal of canyon habitat. The portion of the Eastern Bypass Road crossing Mortandad Canyon



would require the removal of trees and vegetation on the upper slopes of the canyon within a corridor approximately 200 ft wide. Vegetation removal on the steep slopes of the canyon and the bottom of the canyon would be limited to removal of large trees that interfere with the structural bridge spanning the canyon. Photo 2 shows Mortandad Canyon while Photo 3 shows where the proposed alignment would traverse the rubble fill area of the landfill site close to its intersection with East Jemez Road.

Four staffed access-control stations with queuing approaches and necessary utilities would be constructed at the following locations:

- East end of Pajarito Road (west of intersection with New Mexico SR 4 in White Rock)
- Pajarito Road east of LANL core and west of TA-55
- North end of Eastern Bypass Road (south of East Jemez intersection)
- North end of Western Bypass Road (south of West Jemez intersection)



**Photo 2. Eastern Bypass Road at Mortandad Canyon crossing area.**

Staffed access-control stations would be built to LANL construction standards for such structures. These stations would each be about 200 ft<sup>2</sup> in floor space. Each would include an adjacent support building of up to about 2,000 ft<sup>2</sup> in floor space. Each station would be equipped with appropriate utilities including electricity and lighted parking. The staffed access-control station support buildings would be equipped with various video systems, electronic control devices, and fencing to preclude drive arounds as well as appropriate utilities including electricity, potable water, and sewage services.



**Photo 3. Eastern Bypass Road rubble fill area of the landfill site.**

Access into the TA-3 area would also be restricted through permanently closing Bikini Atoll Road and the northern end of Diamond Drive. Small unstaffed access-control stations would be placed at Casa Grande Drive and Pajarito Road to restrict traffic to a select set of LANL employees.

The intersections of Pajarito at Mercury and Pajarito at Diamond would be improved by widening the intersection and realignment of lanes with increased turning areas to facilitate use by larger vehicles including Emergency Management and Response vehicles. Signage and other traffic controls would also be installed to enhance safety.

Internal parking access roads to route traffic in and out of existing parking areas would be constructed off of Diamond Drive and Bikini Atoll Road. The Diamond Drive parking lot access road would be routed from Diamond Drive to the parking lot just north of the LANL Research Library (TA-3-207). This road would be a small 25-ft-wide, two-lane road with a maximum speed limit requirement of about 15 miles per hour. Mature trees would be removed to construct this access road into the parking lot. A small drainage area would be avoided and the side slopes would be protected to minimize erosion; such sensitive areas would be fenced or flagged before construction to assist avoidance by heavy machinery. The parking lot access road to be constructed off of Bikini Atoll Road would be routed just north of the Strategic Computing Complex (TA-3-2327) in a previously disturbed area containing sidewalks and riprap landscaping. No mature trees would require removal, and no areas would require avoidance.



New paved parking areas would be constructed to replace vehicle parking spaces eliminated as a result of constructing the proposed bypass roads. New parking lots would be placed in areas that are already previously disturbed. These parking areas would likely first be used as construction staging areas for the proposed project. Figure 2 identifies these areas; the specific number of parking spaces and the size of the lots would be determined as planning for the project progresses. From one to three parking lots would be constructed. Parking lot construction would be performed according to LANL standards for such facilities.

### **2.1.2 Operations**

The proposed Western and Eastern Bypass Roads would serve as the primary arterials carrying traffic around the LANL TA-3 area. Diamond Drive, now used as the principle north and south arterial, would provide local access and become a service corridor with enhanced pedestrian activity. Under normal circumstances, access on Pajarito Road between White Rock and TA-3 would be restricted to screened vehicles. Screening would be based upon security assessments and could range from conditions that would allow nearly complete access to entirely precluding access to all vehicles. Generally access would be allowed for vehicles with riders possessing LANL or DOE badges, including visitor and temporary badges. It may be possible that vehicle identification technologies would be used to minimize inconvenience. East Jemez Road and Main Hill Road would serve as the primary roadways for the general public. Delivery trucks accessing areas outside of the LANL's core area would continue to be screened at an existing inspection station located on East Jemez Road just west of SR 4.

Road maintenance will include snow removal, road sweeping, painting of lines, repair and/or replacement of asphalt, signs, signals and guard rails. Every few years, the top layer of asphalt will be replaced or repaired depending on how it is weathered and worn. Bridge inspections, painting (depending on materials), and repairs will also occur. The access control posts will receive routine building maintenance for the electrical and mechanical systems, painting and the like.

## **2.2 No Action Alternative**

The No Action Alternative provides a description of current conditions to compare to the potential effects of the Proposed Action. This alternative must be considered even if NNSA is under a court order or legislative command to act [10 CFR 1021.32 (c)]. Under the No Action Alternative NNSA would not construct either the Western or Eastern Bypass Roads, the access controls, and the related improvements described in the Proposed Action. Nor would NNSA demolish the buildings including part of Building 3-40 that lie in the path of the proposed alignments. Diamond Drive would continue to serve as the principle north and south arterial within LANL's core area. Pajarito Road between White Rock and TA-3 would remain open to all vehicular traffic. There would be no construction or demolition debris that would require disposal. The Diamond Drive and Jemez Road intersection would not be redesigned, and Diamond Drive would continue to be accessible to traffic at this location. Potential safety enhancements for pedestrians and vehicle traffic would not be made under the No Action Alternative. Security needs would continue to be met at LANL using temporary stations, roadblocks, and other means already used in TA-3 and elsewhere. Traffic flow would be rerouted or screened as necessary; and severe traffic congestion could result.

## **2.3 Alternatives Considered but Dismissed**

### **2.3.1 Widening Diamond Drive**

Widening Diamond Drive between East Jemez and Pajarito Road to allow for the placement of a staffed access-control station would not meet NNSA's purpose and need for action because security vulnerabilities for certain facilities would not be lessened. In fact, widening Diamond Drive could result in more traffic passing through LANL's central TA-3 area and this might increase exposures and vulnerabilities. Widening Diamond Drive would not readily facilitate the placement of access-control points, including staffed access-control stations, without removal of additional permanent structures. Cultural sites near construction locations could also likely be adversely affected and service disruptions would likely occur because of the major utilities located in this corridor. This alternative was not considered further in this EA.

### **2.3.2 Constructing Access-Control Stations without Bypass Roads**

Constructing staffed access-control stations on Pajarito Road near White Rock and at specific locations around the LANL core area without constructing the two TA-3 bypass roads would not meet NNSA's purpose and need for action. This alternative would not provide sufficient distance for proper queuing lanes or for responding to security contingencies. Placing staffed access-control stations within the existing roadway network would result in unacceptable backups and congestion on East Jemez and West Jemez Roads and a corresponding decrease in the level of service afforded by these principal arterials. This in turn would adversely affect traffic flow within Los Alamos town site north of the Omega Bridge along Diamond Drive and Trinity Drive. This alternative was not considered further in this EA.

### **2.3.3 Realigning Pajarito Road**

Realigning Pajarito Road so that traffic would travel further from certain technical areas along the current alignment would not meet NNSA's purpose and need for action because it would not diminish the security threat nor enhance traffic safety. Realigning the road would require construction and operation of a major transportation corridor within and along the north wall of Pajarito Canyon that would likely have an adverse affect on cultural and natural resources. A realigned road would still be subject to closures or traffic delays as a response to LANL security conditions. This alternative was not considered further in this EA.

### **2.3.4 Providing Truck Barriers**

Placing a truck barrier such as a substantial metal or concrete bar above Pajarito Road, or barriers along the roadside would not meet NNSA's purpose and need for action because it would not address all security risks and could decrease traffic safety. An overhead barrier would constitute the use of deadly force as the only response to one security scenario. This is only authorized under certain conditions and cannot be used routinely. Large vehicles may sometimes be required to move material and items along Pajarito Road and such barriers would also constitute an unacceptable hindrance to necessary mission-support activities. This alternative was not considered further in this EA.



## **2.4 Related Actions**

### **2.4.1 Final Site-Wide Environmental Impact Statement**

The Final LANL Site-Wide Environmental Impact Statement (SWEIS) (DOE 1999a), dated January 1999, was issued in February of that year. A Record of Decision (ROD) was issued in September 1999, and a Mitigation Action Plan was issued in October 1999. The SWEIS considered transportation within a regional context and it focused on transportation accidents related to LANL operations, especially onsite and offsite shipments of radioactive and other hazardous materials. This EA tiers from the SWEIS and any points of difference from the effects attributable to the Bypass Roads Project are included in the analyses in Section 4, Environmental Consequences.

### **2.4.2 Arterial Improvements for Safety at LANL**

There are a number of small safety-based roadway improvement projects that are proposed along Pajarito and East Jemez Roads including intersection improvements at TA-18, -51, and -54; widening the shoulders from TA-18 to TA-59 along Pajarito Road; replacing guard rails at various locations; and an acceleration lane on west-bound East Jemez Road from La Mesita Road at TA-53. NNSA has reviewed these projects to determine the appropriate level of compliance with NEPA; these independent small-scale actions were determined to be eligible for categorical exclusion from the need to prepare an EA or EIS.

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